

PATENT COOPERATION TREATY

PCT

REC'D 11 NOV 2004

INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)



WIPO PCT

Applicant's or agent's file reference 11088P3 WO/RH	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/03581	International filing date (day/month/year) 15.08.2003	Priority date (day/month/year) 22.08.2002
International Patent Classification (IPC) or both national classification and IPC C11D3/00		
Applicant RECKITT BENCKISER INC et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
 - ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 01.03.2004	Date of completion of this report 10.11.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Diebold, A Telephone No. +49 89 2399-8442 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB 03/03581

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

2-13, 15, 16	as originally filed
1, 14	filed with telefax on 25.06.2004

Claims, Numbers

1-18	as originally filed
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2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/GB 03/03581**

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	10-15, 17
	No: Claims	1-9, 16, 18
Inventive step (IS)	Yes: Claims	
	No: Claims	1-18
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

2. Citations and explanations

see separate sheet

Item V:

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement.

- 1) Reference is made to the following documents D1-D3 from the international search report, not taking in account documents indicated in the search report as P-documents or E-documents which are not to be regarded as state of the art according to Rule 64.3 PCT.

D1 = EP-A-0 994 178

D2 = WO-A-95/33024

D3 = EP-A-1 146 111

- 2) The present independent claim 1 is not clear (Article 6 PCT) insofar, as it recites a composition which seems to be made only of the following constituents: an acidic constituent comprising one of the water soluble acid mentioned, at least one anionic surfactant, at least a nonionic surfactant, at least one organic solvent, optionally one or more of the constituents cited, and the balance being water. Therefore, it seems that said hard surface treatment composition does not contain any other components, and therefore, the wording of the present claim 1 should rather be "a hard surface treatment composition which provides a cleaning and disinfecting benefit consisting of".
- 3) The subject-matter of the independent claims 1 and 18 does not comply with the requirement of Article 33(2) PCT, because the subject-matter of these claims cannot be regarded as being novel.

The formulation 2 described in the example of D1 comprises an anionic surfactant (i.e. an ethoxylated C₈-alkylethercarboxylate), a nonionic surfactant (i.e. Etheitensid TN55), citric acid, propylene glycol reading to the organic solvent, and water. The other additional components fall all within the definition of the optional further constituents recited in present claim 1.

The compositions 2 and 5-9 of document D2 teach cleaning compositions comprising citric acid or lactic acid, an alkyl sulfate anionic surfactant, a nonionic surfactant such as Dobanol 79-6^R or Lutensol AO30^R, and propanediol or n-butoxy propoxy propanol (n-BPP) as an organic solvent. The other additional components fall all within the definition of the optional further constituents recited in present claim 1.

The formulation I of the document D3 exemplifies a composition comprising ethanol as the organic solvent, a nonionic surfactant (C₉₋₁₀ EO10), an anionic surfactant such as 2-ethyl-hexyl-sulphate, citric acid, and water. The other additional components fall all within the definition of the optional further constituents recited in present claim 1.

Additionally, all these three documents mention a method of treating a hard surface, which method comprises the application of the corresponding composition to the surface to be treated.

- 4) The additional features of the dependent claims 2-9 and 16 are also disclosed in at least one of the documents D1-D3. Therefore, the subject-matter of these claims is not regarded as being novel in the sense of Article 33(2) PCT.
- 5) The present claims 1-18 meet the requirement under Article 33(4) PCT, because the present invention is industrially applicable in the field of detergents.

Additional remarks

- 6) In claims 7-9 and 12-14 of the present application, as well as in the corresponding parts of the description, the vague term "about" when used in combination with numerical values causes lack of clarity and should therefore be avoided (Article 6 PCT, Guidelines C-III, 4.5a PCT).
- 7) The unit of measure "inches" employed on page 14, line 22 is not additionally expressed in terms of the unit stipulated by Rule 10.1/(a)/and/(b) PCT.

Box No. VIII (ii) DECLARATION: ENTITLEMENT TO APPLY FOR AND BE GRANTED A PATENT

The declaration must conform to the standardized wording provided for in Section 212; see Notes to Boxes Nos. VIII, VIII (i) to (v) (in general) and the specific Notes to Box No. VIII (ii). If this Box is not used, this sheet should not be included in the request.

Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent (Rules 4.17(ii) and 51bis.1(a)(ii)), in a case where the declaration under Rule 4.17(iv) is not appropriate:

In relation to this international application,

RECKITT BENCKISER INC is entitled to apply for and be granted a patent by virtue of the following:

An Assignment from the inventors Karen Ann McCUE and Diane NEIMAN to Reckitt Benckiser Inc dated 22 August 2003.

This declaration is made for the purposes of all designations.

☐ This declaration is continued on the following sheet, "Continuation of Box No. VIII (ii)".

10,525,291

ART 34 AMDT

Rec'd PCT/PTO 16 FEB 2005

ACIDIC HARD SURFACE CLEANERS

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The present invention relates to lavatory cleaning compositions.

Cleaning compositions are commercially important products and enjoy a wide field of utility in assisting in the removal of dirt and grime from surfaces, especially those characterized as useful with "hard surfaces". Hard surfaces are those which are frequently encountered in lavatories such as lavatory fixtures such as toilets, shower stalls, bathtubs, bidets, sinks, etc., as well as countertops, walls, floors, etc.

The prior art has suggested many compositions which are directed to the cleaning of such hard water and soap scum stains. ("Soap scum" is sometimes referred to as "limescale" in Europe.) Many of these are acidic, aqueous compositions which include one or more detergent surfactants. A limited number of these compositions, in addition to a detergent benefit, also provide a germicidal or sanitizing effect to the hard surfaces being treated, often due to the inclusion of one or more antimicrobial constituents, such as known cationic quaternary ammonium compounds which are known to be effective against gram positive type pathogenic bacteria such as *Staphylococcus aureus*, and/or gram negative type pathogenic bacteria such as *Salmonella choleraesuis* and/or *Pseudomonas aeruginosa*, or other known-art antimicrobial constituents such as non-cationic phenolic based antimicrobials e.g., mono- and poly-alkyl and aromatic halophenols; para-chloro-meta-xyleneol; resorcinol and derivatives thereof; bisphenolic compounds such as 2,2'-methylene bis-(4-chloro-6-bromophenol); halogenated carbanilides such as 3,4,4'-trichlorocarbanilides (Triclocarban); 2-hydroxydiphenyl compounds such as Triclosan; parabens such as propylparaben; pyridones; hydantoin compounds such as dimethyldimethylol hydantoin; iodophors and in some cases, bleach. However the inclusion of such antimicrobial constituents is often not without one or more detriments including but not limited to specific formulation limitations, toxicity concerns, and the like.

Exemplary prior art compositions include those recited in EP 0994178; WO 95/33024; EP 1146111.

Accordingly, there is a real and continuing need in the art for improved hard surface treatment compositions which provide a cleaning or disinfecting benefit, (preferably both) and which overcomes one or more of the shortcomings of prior art hard surface cleaning compositions.

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Table 2D	prEN 13697
challenge organism:	log reduction
<i>Staphylococcus aureus</i>	> 6.96
<i>Escherichia coli</i>	> 6.73
<i>Enterococcus hirae</i>	> 6.32
<i>Pseudomonas aeruginosa</i>	> 6.20

Excellent efficacy against these various challenge organisms was demonstrated.

The formulation according to Example 1 of Table 1 was also evaluated according to the general guidelines of the EPA Hard Surface Mildew-Fungistatic Test in order to evaluate the fungistatic effectiveness of the formulation in the control, prevention or inhibition of fungi which may cause mildew on hard surfaces. The specific challenge organism was *Aspergillus niger* (ATCC 16404) which was cultured on modified Sabourauds Dextrose Agar at 25°C-30°C under aerobic conditions.

The test method employed was as follows:

As carriers for the test a series of glazed ceramic tiles (1 x 1 inch square (2.54cm x 2.54cm)) were sterilized for 2 hours in a hot air oven at 180°C.

A conidial suspension generally in accordance with the following recited steps. The spores were washed from the surface of a 7-10 day culture of the test fungus (cultured *Aspergillus niger* (ATCC 16404)) using sterile saline/Triton Solution (0.85% saline + 0.05 % Triton X-100). This suspension was transferred into a sterilized tissue grinder containing 20 sterile glass beads. The piston was reciprocated several times to break up the spore chains, and subsequently the resulting suspension was filtered through a thin layer of sterile cotton gauze to remove hyphal elements. The conidial suspension was standardized to contain five million conidia per mL. One (1.0) mL of the standardized suspension was added to 20.0 mL of sterile Czapek's solution.

The surfaces of 10 tiles were treated by spraying with 3 pumps of the formulation according to Example 1 at a distance of 6 - 8 inches at 20 ± 2°C. After treatment, the tiles were allowed to stand for 3 minutes. Following the 3 minutes, the tiles were placed in a vertical or near vertical position in order to permit any excess liquid to drain. The treated tiles were placed in sterile petri dishes and allowed to dry for 65 minutes with their lids ajar.

For use as "control" carrier, 10 untreated tiles were placed in sterile petri dishes and placed at 35-37°C in an incubator for 65 minutes with their lids ajar.

Following the initial drying period recited above, the surfaces of each test tile and control tile were inoculated with 10µl of the *Aspergillus niger* conidia-Czapek suspension produced previously. The suspension was spread over the entire glazed tile surface without going over the